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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,154	08/28/2003	Nick Horgan	112190.128US2	7047

23483 7590 07/26/2006

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EXAMINER	
WINDER, PATRICE L	

ART UNIT	PAPER NUMBER
2145	

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/650,154	HORGAN, NICK	
	Examiner	Art Unit	
	Patrice Winder	2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II in the reply filed on April 10, 2006 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Douceur et al., USPN 6,185,568 B1 (hereafter referred to as Douceur).

4. Regarding claim 16, Douceur taught a system for packet classification (abstract), comprising:

a pre-processor to receive a packet header of an incoming packet, the packet header including a field, and to assign an associated identifier to the field (column 11, lines 30-38);

a first memory device, the first memory device including a first set of binary patterns (column 11, lines 54-67);

a second memory device, the second memory device including a second set of binary patterns (column 11, lines 54-67);

third memory device, the third memory device including instructions for applying one of the first and second sets of binary patterns to the associated identifier assigned to the field of the incoming packet (column 8, lines 59-65); and

a processor to apply the instructions to the field to match the field to one of the patterns in the first set of binary patterns or second set of binary patterns (column 9, lines 3-22).

5. Regarding dependent claim 17, Douceur taught the field is a network address (column 3, lines 19-25).

6. Regarding dependent claim 18, Douceur taught further comprising: a fourth memory device, the fourth memory device including a result corresponding to a matched pattern received from the processor (column 14, lines 23-37).

7. Regarding dependent claim 19, Douceur taught further comprising: means for determining priority among one or more matched patterns (column 13, lines 37-51).

8. The language of claim 20 is substantially the same as previously rejected claim 16. Therefore, claim 20 is rejected on the same rationale as previously rejected claim 16, above.

9. Claims 21-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Gai et al., USPN 6,892,237 B1 (hereafter referred to as Gai).

10. Regarding claim 21, Gai taught an apparatus for packet classification (abstract), comprising:

(a) a processor array containing a plurality of processing elements (column 9, lines 8-10), wherein each processing element is configured to: (i) compare a classification record derived from an incoming packet with one or more patterns associated with rules to be enforced by performing programmed relational operations (column 9, lines 63-67), and (ii) capture state information in a shift register that is shared by more than one of the processing elements (column 9, lines 48-62);

(b) an instruction decoder to suspend operations for a set of the processing elements and to restart operations for the set of processing elements (column 7, lines 58-67);

(c) at least one priority encoder to determine a highest priority from the state information from the shift registers (column 19, lines 41-49); and

(d) a record memory that is addressed for read and write capabilities, wherein writes are executed to indicate which of several simultaneously processed packets is being submitted to the apparatus for packet classification (column 10, lines 28-58), and wherein reads are executed to indicate which bit or bits are to be provided to the processor array from all of the simultaneously processed packets (column 9, lines 50-62).

11. Regarding dependent claim 22, Gai taught the programmed relational operations include equality, less than or equal to, and greater than or equal to operations (column 15, lines 64-67; column 16, lines 1-8).

12. Regarding dependent claim 23, Gai taught further comprising an instruction memory containing instructions to: (i) select which bit or bits of the simultaneously

processed packets are to be examined by the processor array, and (ii) determine how the selected bit or bits are to be compared against one or more of the patterns (column 10, lines 28-58).

13. Regarding dependent claim 24, Gai taught the instructions in the instruction memory are a classification program, wherein the classification program contains further instructions to divide the classification program into subsets of sequential instructions, each of which represents a subset of the rules defined by the classification program (column 12, lines 1-13).

14. Regarding dependent claim 25, Gai taught a prioritized relationship exists between a pair of the subsets of the rules (column 13, lines 37-44).

15. Regarding dependent claim 26, Gai taught the record memory is rewritable during execution of the classification program such that a result from the priority encoder can be subsequently examined by the classification program (column 7, lines 29-36).

16. Regarding dependent claim 27, Gai taught the result includes the current highest priority match as determined by the priority encoder (column 19, lines 41-49).

17. Regarding dependent claim 28, Gai taught one or more bits selected from one of the classification records in the record memory can determine a subset of instructions in the classification program to apply to one or more of the classification records (column 10, lines 49-67; column 11, lines 1-2).

18. Regarding dependent claim 29, Gai taught the one or more bits selected are selected under programmed control (column 10, lines 45-58).

19. Regarding dependent claim 30, Gai taught the classification program can be seamlessly updated (column 9, lines 8-20).

20. Regarding dependent claim 31, Gai taught the effective size of the classification program could be increased (column 7, lines 50-62).

21. Regarding dependent claim 32, Gai taught the number of processing elements applied to a single incoming packet could be scaled (column 6, lines 27-39).

22. Regarding dependent claim 33, Gai taught the number of simultaneously processed packets could be scaled (column 9, lines 42-52).

23. Regarding dependent claim 34, Gai taught the number of packet bits used to select a classification program could be scaled (column 6, lines 61-67).

24. Regarding dependent claims 35-36, Gai taught multiple instances of the apparatus are cascaded such that a first instance of the apparatus feeds into a second instance of the apparatus (column 9, lines 8-20).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Liao, CA 2,306,364 A1: taught using a packet classification language (PCL) to match incoming data packets;

b. Douceur et al., USPN 6,041,053: taught a technique for efficiently classifying packets using a trie indexed hierarchy forest that accommodates wildcards;

c. Liao, USPN 7,054,315 B2: taught reducing search space when pattern matching for packet classification.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrice Winder whose telephone number is 571-272-3935. The examiner can normally be reached on Monday-Friday, 10:30 am-7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571-272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patrice L. Winder

Patrice Winder
Primary Examiner
Art Unit 2145

July 24, 2006